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(54) CARTON WITH REINFORCED HANDLE

(71) Applicant: GRAPHIC PACKAGING

INTERNATIONAL, INC., Atlanta, GA

John Murdick Holley, Jr., Inventor:

Lawrenceville, GA (US)

Assignee: Graphic Packaging International,

Inc., Atlanta, GA (US)

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See application file for complete search history.

(56)References Cited

U.S. PATENT DOCUMENTS

1.253.193 A 1/1918 Hill 2,122,654 A 7/1938 Nickerson (Continued)

FOREIGN PATENT DOCUMENTS

CACA9/1995 2 160 145 (Continued)

OTHER PUBLICATIONS

International Search Report and Written Opinion for PCT/US2015/ 045622 dated Nov. 6, 2015.

Primary Examiner — Christopher Demeree (74) Attorney, Agent, or Firm — Womble Carlyle Sandridge & Rice, LLP

(57)ABSTRACT

A carton for holding a plurality of articles. The carton can comprise a plurality of panels comprising at least a top panel and a side panel. A plurality of end flaps can be respectively foldably connected to respective panels of the plurality of panels, can be at least partially overlapped to at least partially form a closed end of the carton, and can comprise at least a side end flap foldably connected to the side panel along a first fold line. A handle can be formed in the closed end of the carton for grasping and carrying the carton. The handle can extend in at least the side end flap. A reinforcing flap can be foldably connected to the side end flap along a second fold line, and the reinforcing flap can at least partially overlap the side end flap for reinforcing the handle.

43 Claims, 19 Drawing Sheets

